

## exxx

Ubuntu traceroute gives:

```
ttl: 10, Source: 8.8.8.8
root@ubuntu-s-4vcpu-8gb-amd-nyc1-01:/home/seed/Lab2/Executables# traceroute -I 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 60 byte packets
 1 * * *
 2 10.71.5.154 (10.71.5.154) 1.680 ms 1.673 ms 1.667 ms
 3 * * *
 4 143.244.192.156 (143.244.192.156) 1.538 ms 1.532 ms 1.526 ms
 5 143.244.225.84 (143.244.225.84) 1.966 ms 1.960 ms 2.021 ms
 6 143.244.225.19 (143.244.225.19) 1.841 ms 0.787 ms 0.733 ms
 7 146.190.180.27 (146.190.180.27) 2.594 ms 2.617 ms 2.600 ms
 8 142.251.249.123 (142.251.249.123) 3.197 ms 3.097 ms 3.005 ms
 9 142.250.224.247 (142.250.224.247) 2.597 ms 2.567 ms 2.147 ms
10 dns.google (8.8.8.8) 1.418 ms 1.131 ms 1.112 ms
root@ubuntu-s-4vcpu-8gb-amd-nyc1-01:/home/seed/Lab2/Executables#
```

or

```
root@ubuntu-s-4vcpu-8gb-amd-nyc1-01:/home/seed/Lab2/Executables# traceroute -I 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 60 byte packets
 1 * * *
 2 10.71.5.156 (10.71.5.156) 1.581 ms 1.574 ms 1.568 ms
 3 138.197.248.76 (138.197.248.76) 2.012 ms * *
 4 143.244.192.152 (143.244.192.152) 1.182 ms 1.177 ms 1.171 ms
 5 143.244.225.84 (143.244.225.84) 2.024 ms 2.018 ms 2.013 ms
 6 143.244.225.19 (143.244.225.19) 1.402 ms 0.772 ms 0.729 ms
 7 146.190.180.27 (146.190.180.27) 2.662 ms 2.418 ms 2.285 ms
 8 142.251.249.123 (142.251.249.123) 1.612 ms 1.597 ms 1.328 ms
 9 142.250.224.247 (142.250.224.247) 2.442 ms 2.497 ms 2.485 ms
10 dns.google (8.8.8.8) 1.481 ms 1.426 ms 1.143 ms
```

depending on how it feels...

*So many attempts:*

v1

```
#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1

ttl=1
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()

    packet = sr1(ip / icmp, verbose=0)

    if packet[ICMP].type == 0:
```

```

        print("Complete ", packet[IP].src)
        break
    else:
        print("TTL: %d, Source: " %ttl, packet[IP].src)
        ttl+= 1

```

v2

```

# Hangs at 5
#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1

ttl=6
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()

    packet = sr1(ip / icmp, verbose=0)

    if packet[ICMP].type == 0:
        print("Complete ", packet[IP].src)
        break
    else:
        print("TTL: %d, Source: " %ttl, packet[IP].src)
        ttl+= 1

```

v3

```

#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1

ttl=1
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()

    packet = sr1(ip / icmp, timeout=2, verbose=0)

    if packet is None:
        print(f"TTL {ttl}: No response")
        ttl += 1
        continue

```

```

if packet[ICMP].type == 0:
    print("Complete ", packet[IP].src)
    break
else:
    print("TTL: %d, Source: " %ttl, packet[IP].src)
    ttl+= 1

```

v4

```

#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1

ttl=1
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()

    packet = sr1(ip / icmp, timeout=3, retry=3, verbose=0)

    if packet is None:
        print(f"TTL {ttl}: No response")
        ttl += 1
        continue

    if packet[ICMP].type == 0:
        print("Complete ", packet[IP].src)
        break
    else:
        print("TTL: %d, Source: " %ttl, packet[IP].src)
        ttl+= 1

```

v5

```

#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1, Raw

ttl=1
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()

```

```
packet = IP(dst="8.8.8.8", ttl=5) / ICMP() / Raw(load="HelloRouter")

packet = sr1(packet, timeout=3, retry=3, verbose=0)

if packet is None:
    print(f"TTL {ttl}: No response")
    ttl += 1
    continue

if packet[ICMP].type == 0:
    print("Complete ", packet[IP].src)
    break
else:
    print("TTL: %d, Source: " %ttl, packet[IP].src)
    ttl+= 1
```

V4 Out:

ension: C/C++

```
#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1

ttl=1
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()

    packet = sr1(ip / icmp, timeout=3, retry=3, verbose=0)

    if packet is None:
        print(f"TTL {ttl}: No response")
        ttl += 1
        continue

    if packet[ICMP].type == 0:
        print("Complete ", packet[IP].src)
        break
    else:
        print("TTL: %d, Source: " %ttl, packet[IP].src)
        ttl+= 1
```

5] ✓ 24.3s

```
· TTL 1: No response
  TTL: 2, Source: 10.71.5.156
  TTL: 3, Source: 138.197.248.76
  TTL: 4, Source: 143.244.192.152
  TTL 5: No response
  TTL: 6, Source: 143.244.225.19
  TTL: 7, Source: 146.190.180.27
  TTL: 8, Source: 142.251.249.123
  TTL: 9, Source: 142.250.224.247
  Complete 8.8.8.8
```

Final Version:

```
#!/usr/bin/env python3
from scapy.all import IP, ICMP, sr1

ttl=1
destination="8.8.8.8"

while True:
    ip = IP(dst="8.8.8.8", ttl=ttl)

    icmp = ICMP()
```

```
packet = sr1(ip / icmp, timeout=3, retry=2, verbose=0)

if packet is None:
    print(f"TTL {ttl}: No response")
    ttl += 1
    continue
elif ttl >= 11:
    break
elif packet.type == 3:
    print("Complete ", packet[IP].src)
    break
else:
    print("TTL: %d, Source: " %ttl, packet[IP].src)
    ttl+= 1
```

TigerVNC viewer File

ubuntu-s-4vcpu-8gb-amd-ny1-01:1 (seed) - TigerVNC

Applications: [SEED Labs] Capturing fr...

[SEED Labs] Capturing from any (not tcp port 56116 and host 24.193.29.141 and tcp port 22 and host 24.193.29.141)

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Click to switch to "Workspace 2"

icmp

No.	Time	Source	Protocol	Destination	Length	Info
755	2025-03-21 11:09:...	146.190.180.27	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
756	2025-03-21 11:09:...	146.190.180.27	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
757	2025-03-21 11:09:...	146.190.180.27	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
758	2025-03-21 11:09:...	142.250.224.247	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
759	2025-03-21 11:09:...	8.8.8.8	ICMP	134.209.118.177	76	Echo (ping) reply id=0x3267, seq=30/7680, ttl=117 (request in 750)
760	2025-03-21 11:09:...	8.8.8.8	ICMP	134.209.118.177	76	Echo (ping) reply id=0x3267, seq=31/7936, ttl=117 (request in 751)
761	2025-03-21 11:09:...	8.8.8.8	ICMP	134.209.118.177	76	Echo (ping) reply id=0x3267, seq=32/8192, ttl=117 (request in 752)
762	2025-03-21 11:09:...	142.250.224.247	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
763	2025-03-21 11:09:...	142.250.224.247	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
4492	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no response found)
5090	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no response found)
6525	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no response found)
8237	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no response found)
8706	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=2 (no response found)
8707	2025-03-21 11:09:...	10.71.5.156	ICMP	134.209.118.177	72	Time-to-live exceeded (Time to live exceeded in transit)
8708	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=3 (no response found)
9709	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	72	Time-to-live exceeded (Time to live exceeded in transit)
8710	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=4 (no response found)
8711	2025-03-21 11:09:...	143.244.192.152	ICMP	134.209.118.177	72	Time-to-live exceeded (Time to live exceeded in transit)
8712	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no response found)
9271	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no response found)
9736	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no response found)
10142	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no response found)
10659	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=6 (no response found)
10660	2025-03-21 11:09:...	143.244.225.10	ICMP	134.209.118.177	72	Time-to-live exceeded (Time to live exceeded in transit)
10664	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=7 (no response found)
10665	2025-03-21 11:09:...	146.190.180.27	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
10668	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=8 (no response found)
10669	2025-03-21 11:09:...	142.251.249.123	ICMP	134.209.118.177	72	Time-to-live exceeded (Time to live exceeded in transit)
10670	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=9 (no response found)
10671	2025-03-21 11:09:...	142.250.224.247	ICMP	134.209.118.177	112	Time-to-live exceeded (Time to live exceeded in transit)
10672	2025-03-21 11:09:...	134.209.118.177	ICMP	8.8.8.8	44	Echo (ping) request id=0x0000, seq=0/0, ttl=10 (reply in 10673)
10673	2025-03-21 11:09:...	8.8.8.8	ICMP	134.209.118.177	58	Echo (ping) reply id=0x0000, seq=0/0, ttl=117 (request in 10672)
12176	2025-03-21 11:10:...	13.48.128.35	ICMP	134.209.118.177	84	Echo (ping) request id=0x0001, seq=21352/26707, ttl=242 (reply in 12177)
12177	2025-03-21 11:10:...	134.209.118.177	ICMP	13.48.128.35	84	Echo (ping) reply id=0x0001, seq=21352/26707, ttl=64 (request in 12176)
12191	2025-03-21 11:10:...	16.171.193.127	ICMP	134.209.118.177	84	Echo (ping) request id=0x0001, seq=23016/59481, ttl=243 (reply in 12192)
12192	2025-03-21 11:10:...	134.209.118.177	ICMP	16.171.193.127	84	Echo (ping) reply id=0x0001, seq=23016/59481, ttl=64 (request in 12191)

Frame 338: 84 bytes on wire (672 bits), 84 bytes captured (672 bits) on interface any, id 0

Linux cooked capture v1

Internet Protocol Version 4, Src: 13.60.198.106, Dst: 134.209.118.177

0100 .... = Version: 4

.... 0101 = Header Length: 20 bytes (5)

Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

Total Length: 68

any: <live capture in progress>

Packets: 12825 · Displayed: 89 (0.7%)

Profile: Default

Lab2 > Executables >  traceroute.py > ...

```
1  #!/usr/bin/env python3
2  from scapy.all import IP, ICMP, sr1
3
4  ttl=1
5  destination="8.8.8.8"
6
7  while True:
8      ip = IP(dst="8.8.8.8", ttl=ttl)
9
10     icmp = ICMP()
11
12     packet = sr1(ip / icmp, timeout=3, retry=2, verbose=0)
13
14     if packet is None:
15         print(f"TTL {ttl}: No response")
16         ttl += 1
17         continue
18     elif ttl >= 11:
19         break
20     elif packet.type == 3:
21         print("Complete ", packet[IP].src)
22         break
23     else:
24         print("TTL: %d, Source: " %ttl, packet[IP].src)
25         ttl+= 1
```

PROBLEMS **10** OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

TTL: 128, Source: 8.8.8.8

TTL: 129, Source: 8.8.8.8

^CTraceback (most recent call last):

File "/home/seed/Lab2/Executables/traceroute.py", line 12, in <module>  
 packet = sr1(ip / icmp, timeout=2, verbose=0)  
~~~~~

File "/usr/lib/python3/dist-packages/scapy/sendrecv.py", line 663, in sr1  
 ans, \_ = sr(\*args, \*\*kwargs)  
~~~~~

File "/usr/lib/python3/dist-packages/scapy/sendrecv.py", line 650, in sr  
 s = conf.L3socket(promisc=promisc, filter=filter,  
~~~~~



```

File "/usr/lib/python3/dist-packages/scapy/arch/linux.py", line 500, in __init__
self.ins.bind((self.iface, type))
KeyboardInterrupt
^C
root@ubuntu-s-4vcpu-8gb-amd-nyc1-01:/home/seed/Lab2/Executables# sudo python3 traceroute.py
TTL 1: No response
TTL 2, Source: 10.71.5.156
TTL 3, Source: 138.197.248.76
TTL 4, Source: 143.244.192.152
TTL 5: No response
TTL 6, Source: 143.244.225.19
TTL 7, Source: 146.190.180.27
TTL 8, Source: 142.251.249.123
TTL 9, Source: 142.250.224.247
TTL 10, Source: 8.8.8.8
root@ubuntu-s-4vcpu-8gb-amd-nyc1-01:/home/seed/Lab2/Executables#

```

```

73749 2025-03-21 11:20:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=129 (re
73750 2025-03-21 11:20:... 8.8.8.8 ICMP 134.209.118.177 58 Echo (ping) reply id=0x0000, seq=0/0, ttl=117 (re
80432 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no re
80836 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no re
81159 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=1 (no re
81473 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=2 (no re
81474 2025-03-21 11:21:... 10.71.5.156 ICMP 134.209.118.177 72 Time-to-live exceeded (Time to live exceeded in trans
81478 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=3 (no re
81479 2025-03-21 11:21:... 138.197.248.76 ICMP 134.209.118.177 72 Time-to-live exceeded (Time to live exceeded in trans
81483 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=4 (no re
81484 2025-03-21 11:21:... 143.244.192.152 ICMP 134.209.118.177 72 Time-to-live exceeded (Time to live exceeded in trans
81488 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no re
81925 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no re
82297 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=5 (no re
82684 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=6 (no re
82685 2025-03-21 11:21:... 143.244.225.19 ICMP 134.209.118.177 72 Time-to-live exceeded (Time to live exceeded in trans
82686 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=7 (no re
82687 2025-03-21 11:21:... 146.190.180.27 ICMP 134.209.118.177 112 Time-to-live exceeded (Time to live exceeded in trans
82702 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=8 (no re
82703 2025-03-21 11:21:... 142.251.249.123 ICMP 134.209.118.177 72 Time-to-live exceeded (Time to live exceeded in trans
82709 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=9 (no re
82715 2025-03-21 11:21:... 142.250.224.247 ICMP 134.209.118.177 112 Time-to-live exceeded (Time to live exceeded in trans
82721 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=10 (repl
82722 2025-03-21 11:21:... 8.8.8.8 ICMP 134.209.118.177 58 Echo (ping) reply id=0x0000, seq=0/0, ttl=117 (re
82729 2025-03-21 11:21:... 134.209.118.177 ICMP 8.8.8.8 44 Echo (ping) request id=0x0000, seq=0/0, ttl=11 (repl
82730 2025-03-21 11:21:... 8.8.8.8 ICMP 134.209.118.177 58 Echo (ping) reply id=0x0000, seq=0/0, ttl=117 (re
83692 2025-03-21 11:22:... 134.209.118.177 ICMP 154.213.200.14 106 Destination unreachable (Port unreachable)
86423 2025-03-21 11:23:... 134.209.118.177 ICMP 165.154.163.10 79 Destination unreachable (Port unreachable)
89172 2025-03-21 11:24:... 134.209.118.177 ICMP 146.88.241.121 86 Destination unreachable (Port unreachable)
93390 2025-03-21 11:24:... 134.209.118.177 ICMP 109.236.61.55 73 Destination unreachable (Port unreachable)

```

And I got a bunch of "Host administratively prohibited" messages along the way.

I think they don't like me :D

```

99785 2025-03-21 11:26:... 138.2.229.54 ICMP 134.209.118.177 96 Destination unreachable (Host administratively prohibited)
1004... 2025-03-21 11:26:... 138.2.229.54 ICMP 134.209.118.177 96 Destination unreachable (Host administratively prohibited)

```